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DYKEMA GOSSETT PLLC
39577 WOODWARD AVENUE
SUITE 300
BLOOMFIELD HILLS, MI 48304-5086

EXAMINER

NGUYEN, PHUONGCHAU BA

ART UNIT	PAPER NUMBER
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2616

DATE MAILED: 10/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	09/991,462		WELLS ET AL.	
	Examiner		Art Unit	
	Phuongchau Ba Nguyen		2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27,30,32-36,38,39,42-47,49 and 50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14,17-27,29,32-34,38,39,42-47,49 and 50 is/are rejected.
- 7) ☒ Claim(s) 15,16,35 and 36 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections – 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 30 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 30 recites the limitation "the physical transceiver" in line 6. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections – 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary

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skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 12, 14, 19, 21, 24, 25, 27, 37-39, 42, 47, 49 are rejected under 35 U.S.C. 103(s) as being unpatented over Kawase (5,631,896) in view of Lo (6,842,481).

Regarding claim 1,

Kawase (5,631,896) discloses an autonomous circuit enabling the routing of data to a primary or secondary network cable connected to primary and secondary nodes (not shown-but it is inherent on the working and protection paths) comprising:

a first monitoring device (bit error detecting circuit 56-fig.3) for reporting link status of the primary network cable (working path), wherein the link status of the primary network cable includes a notification of a fault within the primary network cable (col.7, lines 10-16);

a logic device (correlation monitoring circuit 75-fig.3) for monitoring the link status reported by the first monitoring device (bit error detecting circuit 56-fig.3); and

a switching device (switching circuit 71–fig.3) for routing the data to one or the other of the primary or secondary network cables.

Kawase discloses all the claimed limitations, except (1) the monitoring device comprising a physical layer transceiver. However, in the same field of the endeavor, Lo (6,842,481) discloses a repeater 30 comprising a physical layer transceiver 36 in figure 2, see also figure 3 (corresponding to (1)).

Therefore, it would have been obvious to an artisan to apply Lo's teaching to Kawase's system with the motivation being to provide security in Ethernet based media independent interface communications.

Regarding claim 12,

Kawase discloses in figure 3 wherein the only purpose of the first and second monitoring devices (bit error detecting circuits 56 & 66–fig.3) is monitoring the link status of the primary and secondary network cables (working and protection paths) and their associated ports (not shown), and reporting the status (to the correlation monitoring circuit 75–fig.3) using a link

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status output associated with each of the first and second monitoring devices (bit error detecting circuits 56 & 66–fig.3).

Regarding claim 14,

Kawase further discloses wherein the logic device (correlation monitoring circuit 75–fig.3) causes the switching device (switching circuit 71–fig.3) to change the route of the data from the primary cable to the secondary cable if the first monitoring device reports a fault in the primary network cable or primary port, and the second monitoring device reports no fault in the secondary network cable or the secondary port (by sending switching control signal S21–fig.3).

Regarding claim 19,

Kawase further discloses wherein the primary and secondary network cables comprise one of: a fiber distributed data interface (FDDI), a token ring network, or an asynchronous transfer mode (ATM) (col.1, lines 9–12).

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Regarding claim 21,

Kawase further discloses wherein the primary and secondary network cables connect to nodes (line terminals 1 & 2-fig.1), and not to a server.

Regarding claim 24,

Kawase further discloses wherein the circuit (figs. 2-3) comprises hardware only.

Regarding claim 25,

Kawase further discloses wherein the circuit (figs. 2-3) comprises no user configurable parameters and no firmware.

Regarding claim 27,

Kawase further discloses wherein the circuit (figs.2-3) provides electrical outputs (S7 & S17) to indicate the primary and secondary network cable status (error or not) to other equipment (correlation monitoring circuit 75-fig.3).

Regarding claim 37,

Lo further discloses wherein the first monitoring device is a physical layer transceiver (figs. 2-3, physical layer transceiver 36).

Regarding claim 38,

Kawase (5, 631,896) discloses a method of administering a redundant cable system comprising:

monitoring, with the first monitoring device (signal failure detecting circuit 16-fig.2), an occurrence of a fault within a primary network cable (working path-fig.2)

monitoring, with second monitoring device (signal failure detecting circuit 26-fig.2), an occurrence of a fault within a second network cable (figs.9-11); and

switching a data stream route from the primary network cable to the secondary network cable when the first monitoring device indicates a fault in the primary network cable (by the switch circuit 30-fig.2, col.1, lines 54-62).

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Kawase discloses all the claimed limitations, except (1) the monitoring device comprising a physical layer transceiver. However, in the same field of the endeavor, Lo (6,842,481) discloses a repeater 30 comprising a physical layer transceiver 36 in figure 2, see also figure 3 (corresponding to (1)).

Therefore, it would have been obvious to an artisan to apply Lo's teaching to Kawase's system with the motivation being to provide security in Ethernet based media independent interface communications.

Regarding claim 39,

Kawase further discloses wherein the faults in the primary and secondary network cables (working and protection paths—fig.2) are indicated solely by link status outputs on each of the first and second monitoring devices (signal failure detecting circuits 16 & 26—fig.2).

Regarding claim 42,

Kawase further discloses wherein the monitoring of (the primary network cable) and switching from the primary network cable are accomplished with no programming and no software (by the switching circuit 30–fig.2).

Regarding claim 47,

Kawase (5,631,896) discloses a method of creating a cable redundancy comprising:

monitoring a primary network cable (signal failure detecting circuit 16–fig.2) and switching (by switch circuit 30–fig.2) data traveling along the primary network cable to a secondary network cable when a fault is detected in the primary network cable, wherein a link status output (failure status of the working link) on the first PHY indicates the status of the primary network cable (col.2, lines 54–62, fig.2).

Kawase discloses all the claimed limitations, except (1) the monitoring with a physical layer transceiver. However, in the same field of the endeavor, Lo (6,842,481) discloses a repeater 30 comprising a physical layer transceiver 36 in figure 2, see also figure 3 (corresponding to (1)). Therefore, it would have

been obvious to an artisan to apply Lo's teaching to Kawase's system with the motivation being to provide security in Ethernet based media independent interface communications.

Regarding claim 49,

Kawase further discloses the monitoring the working data link is monitored by the signal failure detecting circuit 16, see fig.2 (corresponding to "wherein the monitoring of the primary network cable is accomplished with no programming and no firmware").

6. Claim 50 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawase in view of Lo (6,842,481) as applied to claim 1 above, and further in view of Stener (6,690,650).

Regarding claim 50,

Kawase discloses all the claimed limitations, except (1), wherein the first monitoring device translates a message based on a speed of a network.

However, in same field of endeavor, Stener (6,690,650) discloses the network repeater performing a down shifting operation by breaking the established 100 Mb/s link, and restarting auto-negotiation to establish 10 Mb/s link, see abstract (corresponding to (1)). Therefore, it would have been obvious to an artisan to apply Stener's teaching to provide a more reliable link incorporate two or more repeaters at different data rates and to reduce error rate to bridges, routers, interfaces and switches.

7. Claims 30, 32-34 rejected under 35 U.S.C. 103(a) as being unpatentable over Kawase in view of Stener (6,690,650) , and further in view of Lo (6,842,481).

Regarding claim 30,

Kawase discloses a method of creating a cable redundancy comprising:
monitoring a link status of a primary network cable (working path) with a first monitoring device (signal failure detecting circuit 16-fig.2), wherein the link status of the primary network cable includes a notification of a fault within the primary network cable (col.1, lines 54-58); and

switching data traveling along the primary network cable (working path) to a secondary network cable (protection path) when a fault is detected in the primary network cable (working path), wherein a link status output on the first monitoring device (i.e., failure on the working path) indicates the status of the primary network cable (figs. 9–11).

Kawase discloses all the claimed limitations, except (1), wherein the first monitoring device translates a message based on a speed of a network when the physical transceiver does not monitor the link status of the primary network cable. However, in same field of endeavor, Stener (6,690,650) discloses the network repeater performing a down shifting operation by breaking the established 100 Mb/s link, and restarting auto-negotiation to establish 10 Mb/s link, see abstract (corresponding to (1)). Therefore, it would have been obvious to an artisan to apply Stener's teaching to provide a more reliable link incorporate two or more repeaters at different data rates and to reduce error rate to bridges, routers, interfaces and switches.

Regarding claim 32,

Kawase further discloses wherein the monitoring of (the primary network cable) and switching from the primary network cable are accomplished with no programming and no software (by the switching circuit 30-fig.2).

Regarding claim 33,

Kawase further discloses monitoring the secondary network cable (protection path) with a second monitoring device (signal failure detecting circuit 26-fig.2), wherein a second link status output on the second monitoring device indicates the status of the secondary network cable (i.e., failure on the protection path, see figs.9-11).

Regarding claim 34,

Kawase discloses all the claimed limitations, except (1) wherein the second monitoring device is a physical layer transceiver.

However, in the same field of the endeavor, Lo (6,842,481) discloses a repeater 30 comprising a physical layer transceiver 36 in figure 2, see also figure 3 (corresponding to (1)). Therefore, it would have been obvious to an artisan to

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apply Lo's teaching to Kawase's system with the motivation being to provide security in Ethernet based media independent interface communications.

8. Claims 2-7, 9-10, 17-18, 23, 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawase (5,631,896) in view of Lo (6,842,481), as applied to claim 1 above, and further in view of Bray (6,618,392).

Regarding claim 2,

Kawase discloses all the claimed limitations, except (1) the circuit (line selection device 260-fig.5a) comprises a repeater device for retransmitting data from a local network port, the repeater having at least two ports from which the repeater device can transmit outgoing data and at least one port, which can be used for receiving incoming data .

However, in the same field of endeavor, Bray (6,618,392) discloses a repeater for retransmitting received data to all ports, see column 1, lines 22-26; fig.1 (corresponding to (1)). Therefore, it would have been obvious to apply

Bray's teaching to Kawase's system with the motivation being to prevent the network from being rendered unusable by a node or path that is down.

Regarding claim 3,

Kawase further discloses a second monitoring device (error bit detecting circuit 66-fig.3) for reporting the link status of the secondary network cable (protection path) and secondary node.

Regarding claim 4,

Kawase further discloses wherein the second monitoring device is PHY (signal failure detecting circuits 16 & 26-fig.2).

Regarding claim 5,

Kawase further discloses wherein the logic device (correlation monitoring circuit 75-fig.3) monitors the link status reported by the second monitoring device (bit error detecting circuit 66-fig.3).

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Regarding claim 6,

Kawase further discloses wherein the logic device (correlation monitoring circuit 75–fig.3) causes the switching device (switching circuit 71–fig.3) to change the route of the data from the primary cable to the secondary cable if the first monitoring device reports a fault in the primary network cable or primary port, and the second monitoring device reports no fault in the secondary network cable or the secondary port (by sending switching control signal S21–fig.3).

Regarding claim 7,

Kawase discloses all the claimed limitations, except (1) wherein the logic device (correlation monitoring circuit 75–fig.3) causes the switching device (switching circuit 71–fig.3) to change the route of the data from the secondary cable (protection path) to the primary cable (working path) if the second monitoring device reports a fault in the secondary network cable or the secondary port, and the first monitoring device reports no fault in the primary network cable or the primary port. However, it would have been obvious to an

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artisan to implement a reversion to the working path upon a detection of error on the failure path with the motivation being to provide an efficient way to overcome the effect of failures within the network and provide fast restoration of transmission link once a failure has been detected.

Regarding claim 9,

Kawase discloses in figure 3 wherein the only purpose of the first and second monitoring devices (bit error detecting circuits 56 & 66—fig.3) is monitoring the link status of the primary and secondary network cables (working and protection paths) and their associated ports (not shown), and reporting the status (to the correlation monitoring circuit 75—fig.3) using a link status output associated with each of the first and second monitoring devices (bit error detecting circuits 56 & 66—fig.3).

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Regarding claims 10, 13,

Kawase discloses all the claimed limitations, except (1) wherein neither the first nor second monitoring device is used as an interface between a physical cable medium and a network MAC device.

However, Kawase discloses the first and second bit error detecting circuits 56 & 66–fig.3 connecting to the working and protecting paths correlation monitoring circuit 75–fig.3, thus no bit error detecting circuits used as interface between the physical cable medium and network MAC device (corresponding to (1)). Therefore, it would have been obvious to an artisan to use bit error detecting circuits to detect errors on the working and protection paths with the motivation being to provide an efficient way to overcome the effect of failures within the network and provide fast restoration of transmission link once a failure has been detected.

Regarding claim 17,

Kawase discloses all the claimed limitations, except (1) wherein the primary and secondary network cables comprise an Ethernet network.

However, in the same field of endeavor, Bray (6,618,392) discloses the selected path in an Ethernet network under IEEE standard 802.3u at processing speed, 100 Mb/s (100 Base-TX over untwisted pairs, 100 Base-FX over fiber optic cabling), see col.1, lines 28-57 (corresponding to (1)). Therefore, it would have been obvious to apply Bray's teaching to Kawase's system with the motivation being to provide faster operation of 100 Base-T system at 125 Mb/s data rate.

Regarding claim 18,

Kawase discloses all the claimed limitations, except (1) wherein the Ethernet network is a 10/100 Base-TX Ethernet network.

However, in the same field of endeavor, Bray (6,618,392) discloses traditional Ethernet network (10Base-T) operate at 10 Mb/s Ethernet protocol, as described in standard IEEE 802.3 and the newer Ethernet network under IEEE standard 802.3u accomplished the faster operation of 100 Base-T system at 125Mb/s for unshielded twisted pair physical media, i.e., 100 Base-TX, see col.1, lines 28-57 (corresponding (1)). Therefore, it would have been obvious

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to apply Bray's teaching to Kawase's system with the motivation being to provide faster operation of 100 Base-T system at 125 Mb/s data rate.

Regarding claim 22,

Kawase discloses all the claimed limitations, except (1) wherein the circuit is packaged in a housing of dimensions no greater than five inches high, by ten and one-half inches deep, by eighteen inches wide. However, it would have been obvious to an artisan to change in size to make portable, see *In re Rose*, 105 USPQ 237 (CCPA 1955).

Regarding claim 23,

Kawase discloses all the claimed limitations, except (1) wherein the circuit may service only a single Ethernet link.

However, in the same field of endeavor, Bray discloses Ethernet networks see fig.1, column 1, lines 22-57 (corresponding to (1)). Therefore, it would have been obvious to an artisan to apply Bray's teaching to Kawase's system with the motivation being to provide faster operation at a faster rate.

Regarding claim 26,

Kawase discloses all the claimed limitations, except (1) wherein the circuit is integrated within another Ethernet device to provide automatic redundant network cable operation, or operation with redundant network devices.

However, in the same field of endeavor, Bray discloses switch 24 comprising repeaters 10 Mb/s and 100 Mb/s, see fig.1 (corresponding to (1)). Therefore, it would have been obvious to an artisan to apply Bray's teaching to Kawase's system with the motivation being to prevent the network from being rendered unusable by a node or path that is down.

9. Claims 8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawase in view of Lo (6,842,481) and Bray (6,618,392) as applied to claim 3 above, and further in view of Takeguchi (6,735,171).

Kawase discloses all the claimed limitations, except (1) wherein the first and second monitoring devices are replaced by one or more programmable logic devices or ASICS.

However, in the same field of endeavor, Takeguchi (6,735,171) discloses a firmware 22, 32, 202, 303 (figs.1, 3, 6, 8, 10, col.3, line 8–col.4, line 10)(corresponding to (1)). Therefore, it would have been obvious to an artisan to apply Takeguchi's teaching to Kawase's system with the motivation being to easy upgrade or modify instructions to how to monitor the path effectively.

10. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawase in view of Lo (6,842,481) as applied to claim 1 above, in view of Burke (6,233,235).

Kawase discloses all the claimed limitations, except (1) wherein the FDDI is a fiber optic 100 base–FX.

However, in the same field of endeavor, Burke (6,233,235) discloses a variety of networks of ATM, SONET, FDDI, as well as 100Base–T Ethernet networks, see column 6, lines 45–48 (corresponding to (1)). Therefore, it would have been obvious to an artisan to apply Burke's teaching to Kawase's system with the motivation being to provide faster operation of 100 Base–T system at 125 Mb/s data rate.

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11. Claim 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawase in view of Lo (6,842,481) as applied to claim 38 above, and further in view of Wang (6,813,241).

Kawase further discloses when the second monitoring device (signal failure detecting circuit 26—fig.2) indicates a fault in the secondary network cable (protection path), the first monitoring device (signal failure detecting circuit 16—fig.2) indicates no faults in the primary network cable (working path), see figs.9–11.

Kawase discloses all the claimed limitations, except (1) switching the data stream route from the secondary network cable to the primary network cable. However, in the same field of endeavor, Wang discloses when the working data link 220—fig.5a has recovered from a failure, reversing (switching back) to the working data link from the protection data link (col.8, lines 41–65). Therefore, it would have been obvious to an artisan to apply Wang's teaching to Kawase's system with the motivation being to provide an efficient way to overcome the effect of failures within the network and provide fast restoration of transmission link once a failure has been detected.

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12. Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wang (6,813,241) in view of Lo (6,842,481).

Wang (6,813,241) discloses a circuit (line selection device 260, figs. 5a-5b) enabling the routing of data to a primary (working data link) or secondary (protection data link) network cable connected to primary and secondary nodes (not shown) comprising:

a monitor device 280-fig.5a for monitoring link status of the primary network cable, wherein the link status of the primary network cable includes a notification of a fault within the primary network cable (col.7, lines 10-16);

a complex programmable logic device (CPLD) (not shown) for monitoring the link status (i.e., failure in working data link) reported by the first PHY (based upon the working data link status, triggering event is activated to switch data from failed working data link to the protection data link-emphasis added, col.8, lines 35-38); and

a switch (switch 270-fig.5a) for routing the data to one or the other of the primary or secondary network cables.

Kawase discloses all the claimed limitations, except (1) the monitoring device comprising a physical layer transceiver. However, in the same field of the endeavor, Lo (6,842,481) discloses a repeater 30 comprising a physical layer transceiver 36 in figure 2, see also figure 3 (corresponding to (1)).

Therefore, it would have been obvious to an artisan to apply Lo's teaching to Kawase's system with the motivation being to provide security in Ethernet based media independent interface communications.

13. Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wang in view of Lo (6,842,481) as applied to claim 44 above, and further in view of Bray (6,618,392).

Wang discloses all the claimed limitations, except (1) the circuit (line selection device 260-fig.5a) comprises a hub device for retransmitting data from a local network port, the hub having a primary and secondary port for both receiving incoming data and sending outgoing data.

However, in the same field of endeavor, Bray (6,618,392) discloses a repeater for retransmitting received data to all ports, see column 1, lines 22-

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26; fig.1 (corresponding to (1)). Therefore, it would have been obvious to apply Bray's teaching to Wang's system with the motivation being to prevent the network from being rendered unusable by a node that is down.

14. Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wang in view of Lo (6,842,481) as applied to claim 44 above, and further in view of Kawase (5,631,896).

Wang discloses all the claimed limitations, except (1) the circuit (line selection device) comprising a second PHY for monitoring the link status of the secondary network cable and secondary node.

However, in the same field of endeavor, Kawase (5,631,896) discloses signal failure detecting circuits (16 & 26-fig.2) for detecting (monitoring) a line signal failure on the protection path, see column 1, lines 54-65 and figs. 9-11. Therefore, it would have been obvious apply Kawase's teaching to Wang's system with the motivation being to avoid switching data to a failed protection data link.

Allowable Subject Matter

13. Claims 15-16, 35-36 are allowed.

Response to Arguments

14. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuongchau Ba Nguyen whose telephone number is 571-272-3148. The examiner can normally be reached on Monday-Friday from 10:00 a.m. to 2:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on 571-272-7629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Phuongchau Ba Nguyen
Examiner
Art Unit 2616


**WELLINGTON CHIN
SUPERVISORY PATENT EXAMINER**